

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-5 (Cancelled).

Claim 6 (Currently amended): An ultrasonic sensor comprising:

a semiconductor crystal substrate having a recess formed on a part of an upper surface thereof;

a γ -Al₂O₃ single crystal film epitaxially grown on a semiconductor single crystal substrate;

an epitaxial single crystal Pt thin film disposed on the γ -Al₂O₃ single crystal film;

a highly oriented ferroelectric thin film disposed on the epitaxial single crystal Pt thin film; and

an upper electrode disposed on the ferroelectric thin film;

wherein

the γ -Al₂O₃ single crystal film overhangs the recess formed on a part of the upper surface of the semiconductor crystal substrate;

~~the semiconductor single crystal substrate is subjected to a treatment for adjusting etched from the upper surface thereof to adjust a resonant frequency and detect an ultrasonic wave to be detected.~~

Claim 7 (Previously presented): The ultrasonic sensor according to Claim 6, wherein the semiconductor single crystal substrate has an SOI structure.

Claims 8-11 (Cancelled).

Claim 12 (Previously presented): The ultrasonic sensor according to Claim 6, wherein the semiconductor single crystal substrate is a Si single crystal.

Claim 13 (Previously presented): The ultrasonic sensor according to Claim 12, wherein the γ -Al₂O₃ single crystal film epitaxially grown on a semiconductor single crystal substrate is grown on a (100) face of the Si single crystal.

Claim 14 (Previously presented): The ultrasonic sensor according to Claim 6 wherein the highly oriented ferroelectric thin film disposed on the epitaxial single crystal Pt thin film comprises one selected from the group consisting of BaMgF₄, Bi₄Ti₃O₁₂, (Bi,La)₄Ti₃O₁₂, BaTiO₃, Ba_xSr_{1-x}TiO₃, SrBi₂Ta₂O₉, PbTiO₃, Pb_yLa_{1-y}Zr_xTi_{1-x}O₃, and ZnO.

Claim 15 (Previously presented): The ultrasonic sensor according to Claim 6 wherein the upper electrode disposed on the ferroelectric thin film comprises gold black.